

or modification and to the control of burrowing mammals. We examine the nest site characteristics and reproductive success of Burrowing Owls during two breeding seasons in the southern portion of the Chihuahuan desert. From March to July 1985 and 1986 owls and their burrows were located searching an area of 20 000 ha using stand condition maps of the Mapimi Biosphere Reserve (Durango, Mexico; 26°29'–26°52'N, 103°58'–103°32'W). Nesting densities were 0.15 pairs/km² and 0.12 pairs/km² in 1985 and 1986 ($N = 29$ and $N = 23$ pairs, respectively). No difference in nesting success was found in both years (60%) and productivity was also similar (2.19 and 1.63 young/successful nest, 1.52 and 0.90 young/attempt in 1985 and 1986, respectively). Burrow re-use was 55.2%. PCAs and correlation tests show that a mixture of *Prosopis*, *Larrea* and *Hilaria* in the vegetation of the "playas" is important in the distribution of the nests and is highly correlated with nesting success. Nests located at the *Prosopis-Hilaria* grassland vegetation produced almost 50% of the total fledglings ($\chi^2 = 7.62$; $df = 1$; $P < 0.01$). The highest number of fledglings is produced in kangaroo-rat and fox burrows, burrows located under grassland and clay-sand soils. The mean distances between adjacent owl nests were over 1 km, but ranged from 30 to 4167 m (mean = 1287 ± 98). The distribution of active nests in both years indicates a tendency toward regular spacing of breeding pairs. The grassland vegetation type is the habitat with more potentialities to be used by human beings in the zone as cattle raising is the most important economic activity. The management plan of this Biosphere Reserve must consider the negative effects of cattle raising on the burrows functioning as potential nests for Burrowing Owls proposing that cattle densities on the owl breeding areas be moderate.

IS THE DENSITY OF BURROWING OWLS BREEDING IN ALBERTA LIMITED BY HABITAT?

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To evaluate whether the density or distribution of breeding pairs of Burrowing Owls (*Athene cunicularia*) is determined by habitat availability, I recorded the location of agricultural fields, the density and distribution of native vegetation, and the abundance of burrows and "grasshoppers." The results were compared between nest sites and control sites located 1 km north of each nest site. If the results of this study are extrapolated to the population level, a conclusion that emerges is that in this particular area, where the dominant land use is grazing with 15% cultivation, Burrowing Owls are not limited in number or distribution by habitat availability.

OBSERVATIONS, RESIGHTINGS, AND ENCOUNTERS OF REHABILITATED, ORPHANED, AND RELOCATED BURROWING OWLS

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This paper describes data on the results of banded, rehabilitated, orphaned, and/or relocated Burrowing Owls. Between 1981 and 1988, 16 injured or orphaned Burrowing Owls were banded and released in occupied or unoccupied burrows within an established colony on the University of California, Davis (UCD) campus in order to augment a declining population and to observe and document post-release behavior, survival, and mortality. A total of nine HY owls were fostered, and five were encountered or resighted. Two were encountered three and five days post-release due to collisions with large windows near the release site. One owl encountered 12 days post-release was retrapped at the release site. Two other fostered owls were resighted up to 28 days and 34 days post-release. These two utilized both the original release burrow and satellite burrows within 30 yards. A total of seven adult rehabilitated owls was released with one encounter 80 days post-release, dead due to collision with a vehicle approximately 200 yards from the release site. Another total of seven Burrowing Owls was relocated at distances ranging from 0.5 miles to 30 miles. Both of the two adult owls relocated at 0.5 miles on the UCD campus in December 1981 were later encountered at 426 days (dead due to collision with a vehicle) and 1310 days (retrapped near the release site). In June 1991, six other Burrowing Owls were relocated 15 and 30 miles away from a development site in Sacramento. Of the six relocated owls, five were observed between 10 and 49 days post-release. One adult female observed 10 days at the relocation site returned 15 miles to its original territory, arriving 32 days post-release. In another successful short distance relocation project, a technique using a one-way burrow exit precluded the necessity for trapping. All owls relocated themselves to artificial burrows previously placed 50 yards away. These data suggest that while some Burrowing Owls develop a strong fidelity to a relocation site, others tend to move on to other habitats after a period of adjustment at a relocation site.

COMPARISON OF SELECTED ASPECTS OF BURROWING OWL ECOLOGY AT TWO SITES IN SANTA CLARA COUNTY, CALIFORNIA

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A two-year study was begun in January 1992, which investigates the effect of land use at Moffett Naval Air Station on the ecology and behavior of the base's western Burrowing Owl (*Speotyto cunicularia hypugaea*) population. These preliminary data compare reproductive and burrow choice parameters at Moffett and an adjacent site, Shoreline, a regional park. In August 1992, at least 37 adults (18 pairs and one single bird) lived on approxi-